

EZFLOW^{XR} **Hydraulic Trap**



INSTALLATION INSTRUCTIONS

43'/48'/50' 2002 and Newer Timpte STD/Split Tub Style Hopper Trailers
w/ 54" Doors

Part # 101587 – 96w / Part # 101588 –102w



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March 21, 2019

PURPOSE:

This kit is intended to convert a 2002 or newer Timpte trailer from existing manual crank 54" hopper doors to EZ Flow^{XR} hydraulic hopper doors with electronic controls and remote. Note: Must have roller bearing sliding doors.

Tools Needed

- Standard Wrench Set
- Standard Socket Set
- Deep Well Socket Set
- Hole Saw Set up to 2 1/2"
- Vice Grip Pliers
- Pliers
- C-Clamps
- Screw Driver Set
- Socket Extension
- Drill Bits 9/32" – 13/32"
- Hammer
- Penetrating oil
- Cordless Drill
- T-10 Torx Driver
- Hex wrench set

Recommended hydraulic oil (2 gallons included):

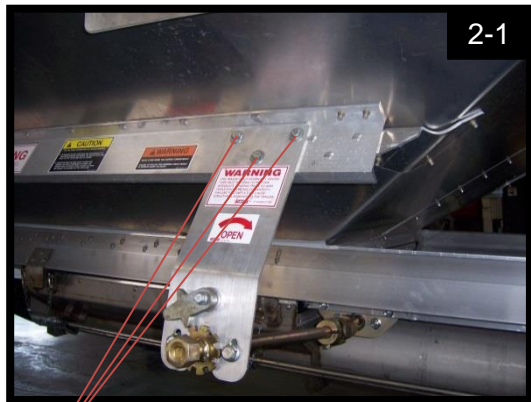
EZ Hydraulic Fluid – P/N 577-55236 – Approximately 1-1/2 gallons required.

Must be an all season soy based fluid rated to be fluid down to -65°F.

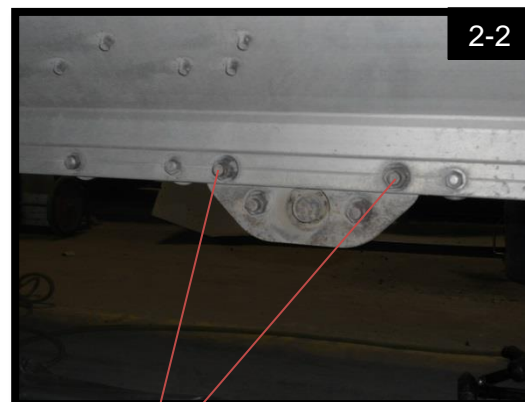
INSTALLATION INSTRUCTIONS

REMOVE EXISTING MANUAL DOOR OPENERS

- Remove the three bolts that hold the manual crank shaft.
- Remove the cross shaft by removing the two side brackets from door rails. There are two bolts per side of door. Repeat for both doors.



Three bolts per door opener to be removed.



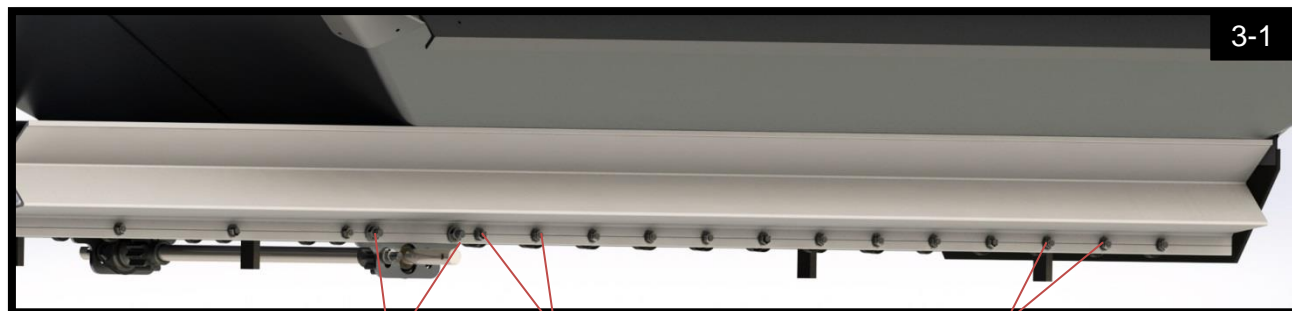
Four bolts per door opener shaft (two per side) to be removed.

VERIFY THAT THE DOORS ROLL SMOOTHLY

- Pull the doors open and closed a few times and determine if they are operating smoothly.
- If there is any binding on the doors, determine why they are not operating smoothly and rebuild the doors if necessary.

REMOVE THE DOOR ROLLERS

- Remove four rollers per door rail. 16 total. Save the roller and all hardware except the bolt for installing the hydraulic cylinders.
- Start from the manual door opener cross shaft, remove the two bolts holding the bearing block, remove the next two rollers, skip eight then remove the next two. Rollers and bolts locations can be seen in the following figure.

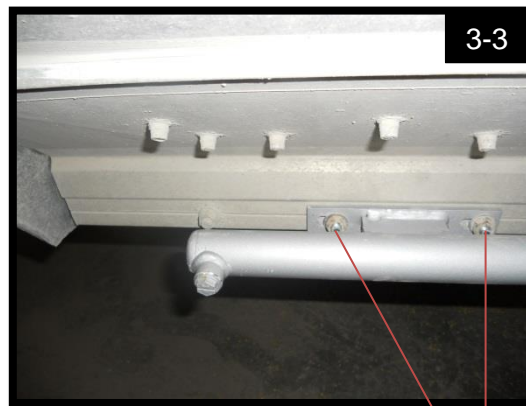


Door shaft hanger bolts to remove.

Remove these door rollers and bolts, four per side rail.

INSTALL THE HYDRAULIC CYLINDERS

- Install the hydraulic cylinders using the 3/8-16 X 2" long stainless steel bolts and the rollers and hardware saved from the previous step.
- Hydraulic cylinder rods need to point toward the center of the trailer. Do not completely tighten the bolts until the door brackets are installed.

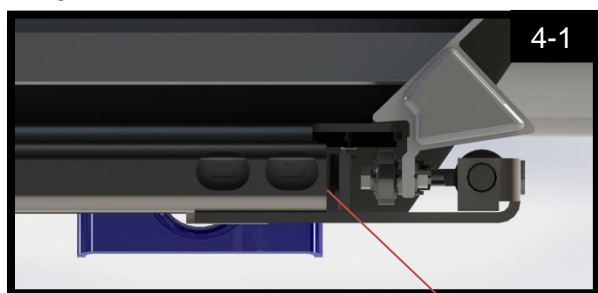


Install hydraulic cylinders with the 3/8" X 2 bolt – washer – roller – washer – washer – trap frame – cylinder foot – washer – nut.

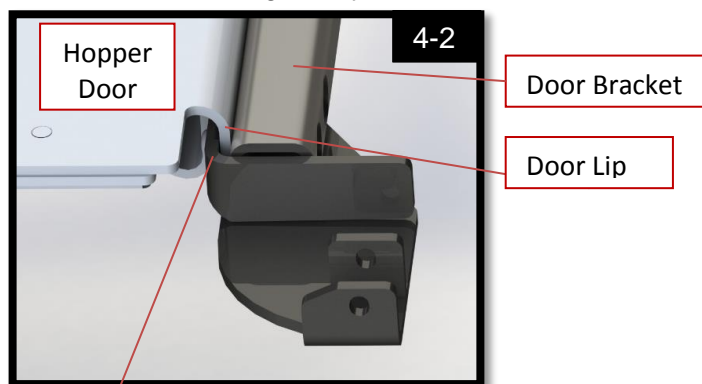
INSTALL THE DOOR BRACKETS

- Open the doors at least 6" - 8" to make it easier to install the door bracket assembly.
- Screw on the quick release yokes onto each of the cylinder rods as far as possible.
- Slide the door bracket assembly onto the front lip of the door. Make sure the lip of the door is between the square tube and the back lip of the bracket.
- While holding the door bracket assembly in place close the door until the cylinder rods are protruding through the outer holes in the bracket.
- When the door is completely closed, insert the quick release pins through the bracket and yokes.
- Drill 13/32" holes in the door lip thru the center of all the slots in the door bracket assembly.

- Insert a 3/8" x 2" bolt through the 13/32" hole in the back of each of the reinforcing brackets.
- Install the reinforcing bracket by sliding the bolt through the inner hole of the door bracket, the lip of the door, and the reinforcing tube and use a 3/8" flange nut to secure.
 - a. Install the 3/8" x 1 1/4" bolts and 3/8" flange nuts through the remaining holes in the door brackets, the lip of the door, and the reinforcing tube.
 - b. Slide the door open so there is access to the top of the door.
 - c. From the bottom side of the door drill four 1/4" holes through the door using the holes in the reinforcing brackets as a guide.
 - d. From the top side of the door countersink the four holes so that the M6 x 35 socket flat head screw will fit flush against the top of the door.
 - e. Install the four M6-1.0 x 35mm flat head socket cap screw and M6 nuts through the door and the reinforcing bracket.
 - f. Tighten the 3/8" flanged locking nuts to hold the bracket and the reinforcing tube in place.
 - a. *If Huck bolts are available, they can be used instead of the standard bolts. Huck bolts are not included in this kit. Use Timpte part numbers 032-01512 – Huckbolt 3/8 uncapped #8, and 032-37347 – Collar Huck 3/8".*
 - g. After the brackets are attached to the doors tighten the bolts attaching the cylinders to the door frame.



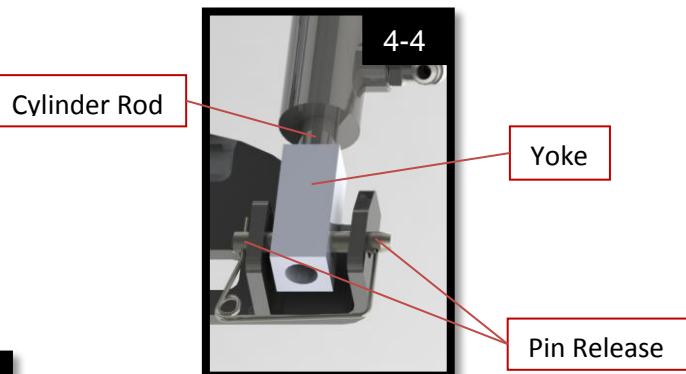
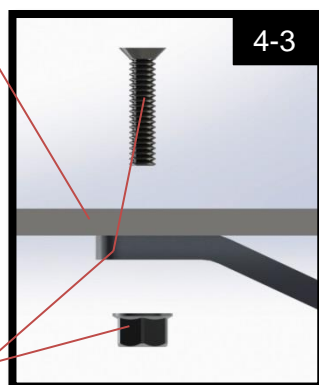
Slide the door bracket onto the lip of the door. Make sure the door lip is between the square tube and the back lip of the bracket.



Bracket Lip

Drill 1/4" holes from the underside of the door using the reinforcing bracket as a guide. Counter-sink the topside of the door to make the M6x35 screw flush.

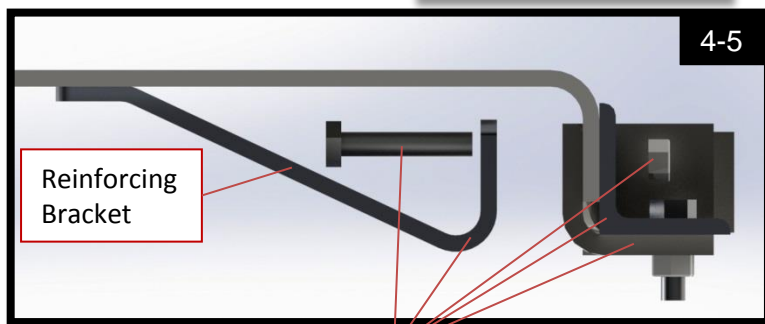
Install the M6-1.0 x 35 screws and nuts.



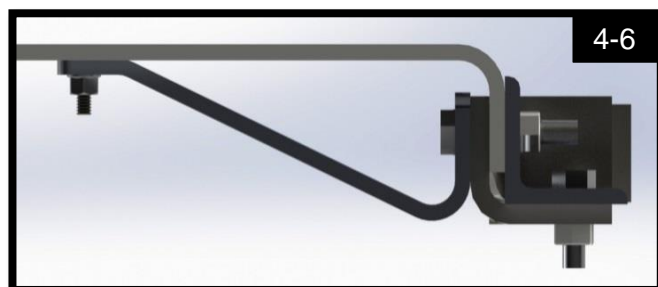
Cylinder Rod

Yoke

Pin Release



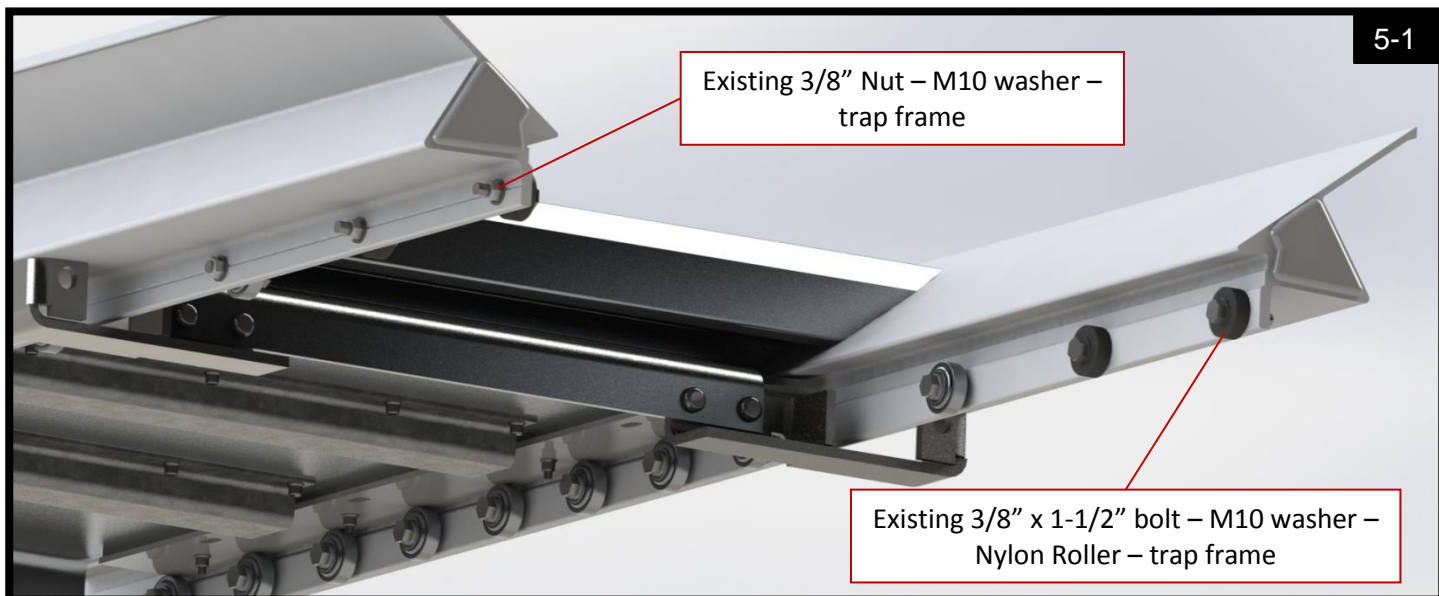
Attach reinforcing bracket, and the door bracket to rear lip of the door and the reinforcing angle to the front lip of the door with 3/8" x 2 bolts and nuts on both sides. Finish attaching the door brackets using 3/8" x 1 1/4" bolts and nuts.



Finished Door Bracket Installation

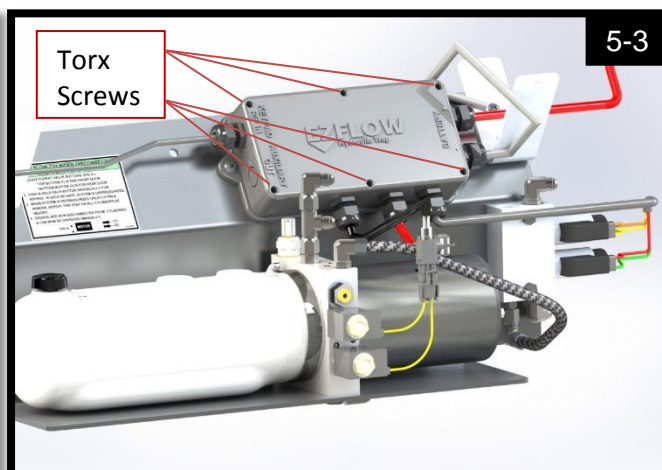
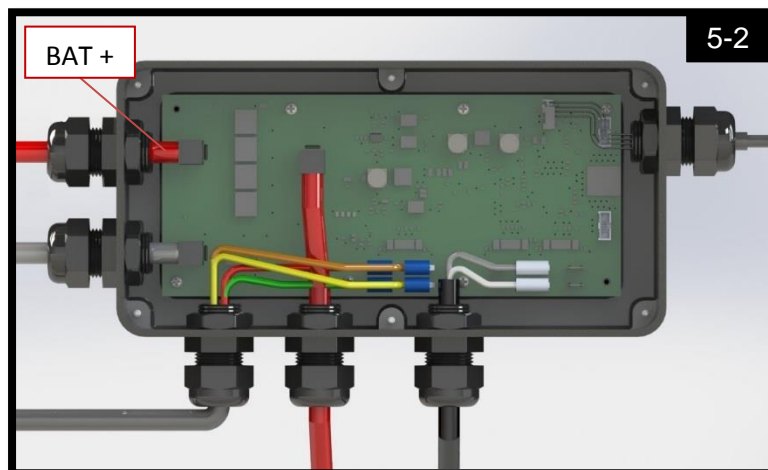
REPLACE THE STEEL ROLLER BEARINGS WITH NYLON ROLLER BEARINGS (IF NEEDED)

- Remove the steel roller bearings.
 - a. Remove four of the roller bearings on the open side of the trap frame two from each side.
 - b. Keep the bolts and nuts to be reused with the nylon bearings.
- Install the new nylon roller bearings.
 - a. Install new bearings using the existing bolt, M10 washer – nylon roller – trap frame – M10 washer – nut.
 - b. Tighten the nut until it is tight. The nylon roller does not turn the trap door slides across it.

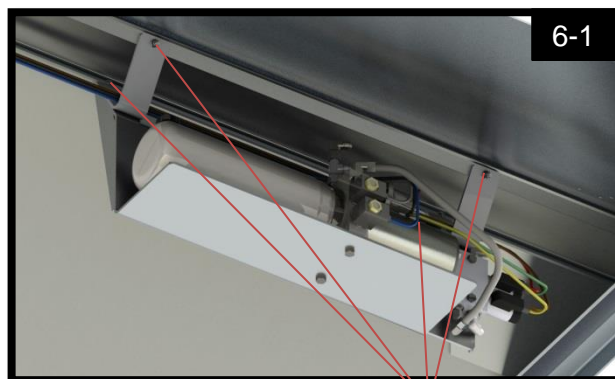
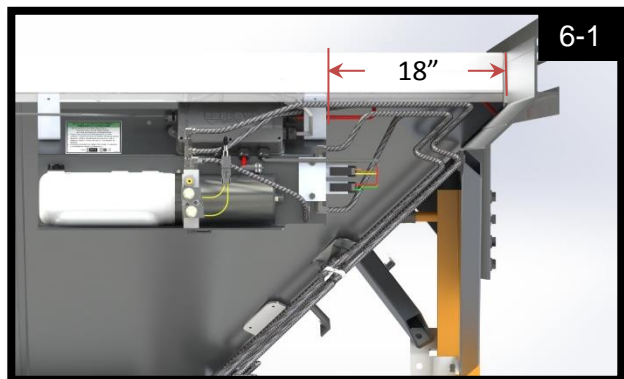


INSTALL THE HYDRUALIC POWER UNIT

- Remove the control box from the mounting lid that is installed on the power unit assembly using a T-10 Torx driver.
- Insert the bare wire end of the 32' 4GA red power wire through the compression fitting in the BAT + side of the control box and then into the set screw on the control board.
- Tighten the set screw with a hex wrench.
- Using a 1" end wrench, tighten the compression fitting around the wire so that moisture and debris cannot enter the control box. **Failure to do so may void warranty.**
- Place the control box back onto the mounting lid. Make sure the rubber gasket is properly placed inside the mounting lids groove. **Failure to do so may void warranty.**
- Use the (5) Torx screws to fasten the control box to the mounting lid.



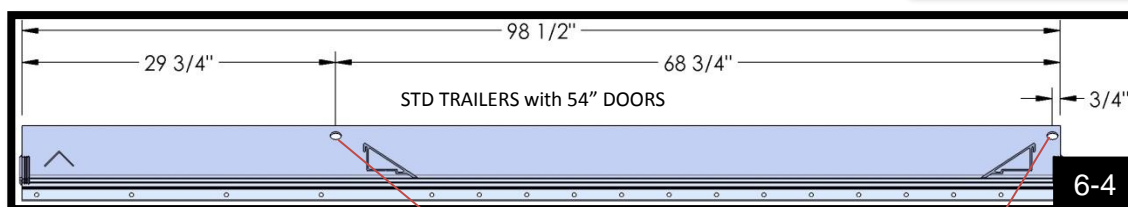
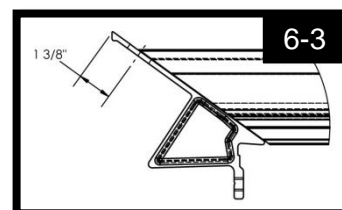
- Clamp the pump mount bracket to the cross c-channel in the apex between the tubs. Position it at the start of the radius of the bend and the edge 18" from the curb side rail.
- Drill four 9/32" holes in the cross c-channel. Install the bracket with 1/4" X 1-1/2" bolts, 1/4" nuts and 1/4" lock washers.



1/4" x 1-1/2" Bolt, 1/4" Lock Washer & 1/4" nuts

DRILL HOLES FOR THE CROSS HOSES

- Drill two 1-1/8" holes with a hole saw in each trap frame rail as shown.
- Total of 8 holes required per trailer.
- Drill holes perpendicular to surface of trap frame.
- Be careful not to hit the tub when drilling holes.
- Insert 034-40444 – 3/4" RUBBER GROMMET into holes.



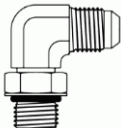
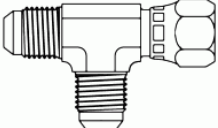
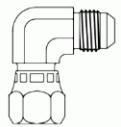
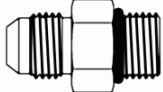
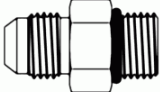
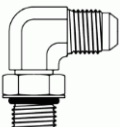
Drill 1-1/8" holes through trap frame

INSTALL HYDRAULIC FITTINGS

- When installing hydraulic fittings, hand tighten all fittings until all fittings and hoses are installed. When all connections are made, go back and tighten all fittings.
- Proper way to install hydraulic fittings and hoses.
 - a. 37 Degree JIC Fitting Assembly Instructions
 - i. Lubricate threads and the entire surface of the cone with hydraulic fluid.
 - ii. Align mating components for hand connection and turn flare nut until sealing surface makes full contact.
 - iii. Torque flare nut to 18-20 foot/lbs. for (-6) fittings. All torques are wet torques. Do not tighten dry.
 - iv. Alternative to torque method in step 3 is to tighten nut until firm resistance is felt. Turn Flare nut clockwise no less than 30 degrees and no more than 90 degrees. Again lubrication of fitting is required before tightening.
 - b. SAE O-Ring Adapter Assembly Instructions
 - i. Lubricate O-ring and threads of fitting with hydraulic fluid.
 - ii. Looking at fitting from end with nut/washer/O-ring assembly, back off lock nut by turning nut clockwise as far as possible on fitting.
 - iii. Turn fitting into the port until resistance is felt.
 - iv. Back off fitting counterclockwise for proper alignment but do not exceed one revolution.

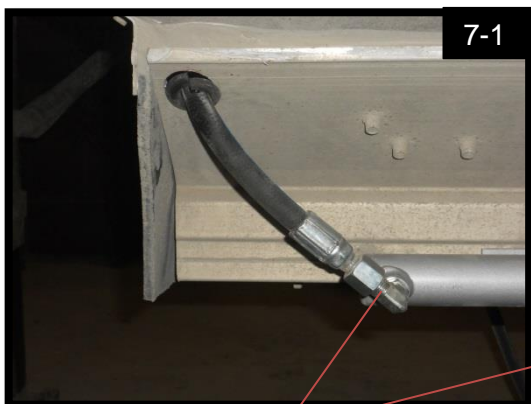
- v. Tighten lock nut to 8-10 ft. /lbs. for (-4) and 12-16 ft. /lbs. for (-6) All torques are wet torques. Do not tighten dry.
- vi. Alternative to torque method in step 5 is to tighten nut until firm sudden resistance is felt while holding fitting in place. Turn lock nut clockwise an additional 1 to 1-1/4 flat revolution. Again lubrication of fitting is required before tightening.

HYDRAULIC FITTING CHART

			
TIMPTE - 029-49657 <u>FITTING #6801-6-6</u>	TIMPTE - 029-50223 <u>FITTING #6602-6-6</u>		
			
TIMPTE - 029-50435 <u>FITTING #6500-6-6</u> PREINSTALLED ON MOTOR BRACKET ASSEMBLY	TIMPTE - 029-49468 <u>FITTING #6400-6-4</u> PREINSTALLED ON MOTOR BRACKET ASSEMBLY	TIMPTE - 029-50225 <u>FITTING #6400-6-6</u> PREINSTALLED ON MOTOR BRACKET ASSEMBLY	TIMPTE - 029-51138 <u>FITTING #6801-6-4</u> PREINSTALLED ON MOTOR BRACKET ASSEMBLY

- Hydraulic cylinder fittings.
 - a. Install part number 029-49657 - adapter 6801-6-6, 90 degree JIC to O-RING into each of the eight cylinder ports.
 - b. On the curb side of the trailer, install part number 029-50223 – adapter 6602-6-6-6, Tee, JIC to female swivel JIC to JIC onto each of the 90 degree adapters.
(DO NOT REMOVE PLUGS UNTIL READY TO INSTALL FITTINGS OR HOSES)

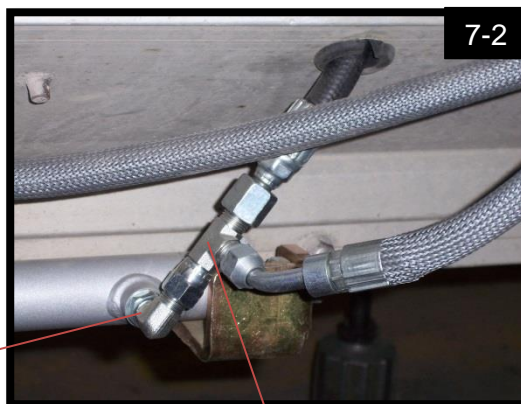
ROADSIDE



7-1

029-49657 (6801-6-6)

CURBSIDE



7-2

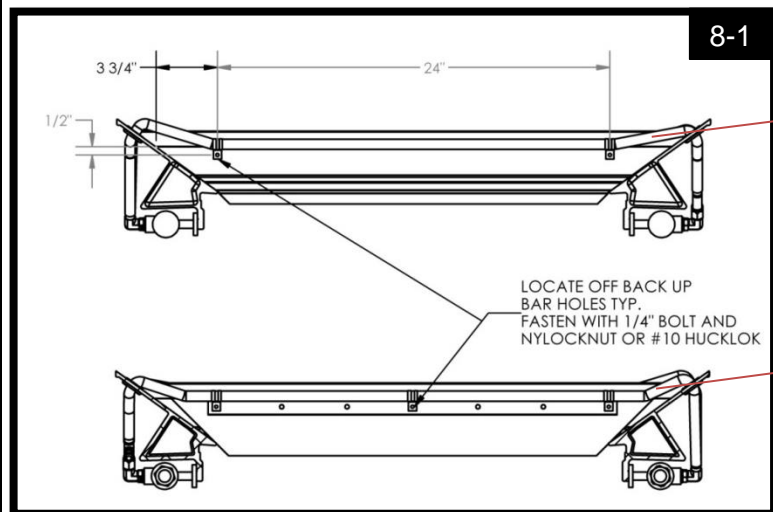
029-50223 (6602-6-6-6)

INSTALL HYDRAULIC HOSES STD TUB WITH 54" DOOR

- 96" Wide Trailer
 - a. 029-53991 – 56-1/2" hydraulic hose. Cross rear of hopper – cylinder tube end.
 - i. One hose for each hopper. Two total hoses.
 - ii. Attach hose to hopper as shown. 1/4" bolts, nylock nuts, and 5/8" Jiffy clips.
 - b. 029-53989 – 46-1/2" hydraulic hose. Cross front of hopper – cylinder rod end.
 - i. One hose for each hopper. Two total hoses.
 - ii. Attach hose to hopper as shown. 1/4" bolts, nylock nuts, and 5/8" Jiffy clips.

- 102" Wide Trailer
 - a. 029-53991 – 56-1/2" hydraulic hose. Cross rear of hopper – cylinder tube end.
 - i. One hose for each hopper. Two total hoses.
 - ii. Attach hose to hopper as shown. 1/4" bolts, nylock nuts, and 5/8" Jiffy clips.
 - b. 029-53992 – 52-1/2" hydraulic hose. Cross front of hopper – cylinder rod end.
 - i. One hose for each hopper. Two total hoses.
 - ii. Attach hose to hopper as shown. 1/4" bolts, nylock nuts, and 5/8" Jiffy clips

If the hoses going across the rear of the trap frame seem too long, rotate the 90° fitting on the roadside of the tub forward to use up the slack.



Use 029-53991 – 56-1/2" hydraulic hose. The hose goes thru the previously drilled holes and across hopper to other cylinder. Rear of hopper, cylinder rod end.

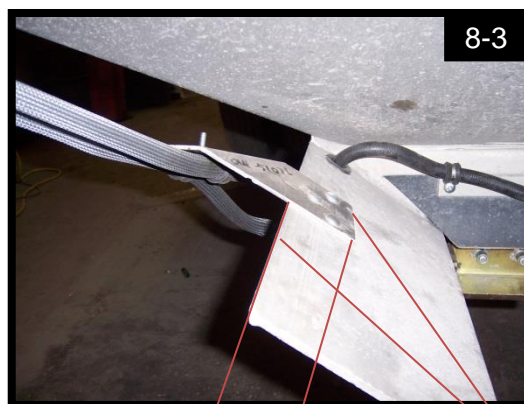
Use 029-53989 – 46-1/2" hydraulic hose 96w. Use 029-53992 – 52-1/2" hydraulic hose 102W. The hose goes thru the previously drilled holes and across hopper to other cylinder. Front of hopper, cylinder rod end.

INSTALL THE HOSE BRACKETS

- All hose brackets are to be installed on the curb side of the trailer.
- Brackets are to be installed with the included 1/4" x 1-1/2" bolts and 1/4" nylock nuts.
 - a. *If installer has access to Huck guns and bolts, optional use of 032-02087 – HUCKBOLT 1/4" #10 UNCAPPED and 032-02000 – COLLAR HYUCK 1/4" STD FLANGE is approved.*
- Clamp bracket into position and transfer drill holes.
- Lower edge of brackets is located 2-1/2" down from the edge of the tube rail, and 4-1/2" from the large hole for the cross hose.
- Bracket 041-51075 installs on the front & rear tub.



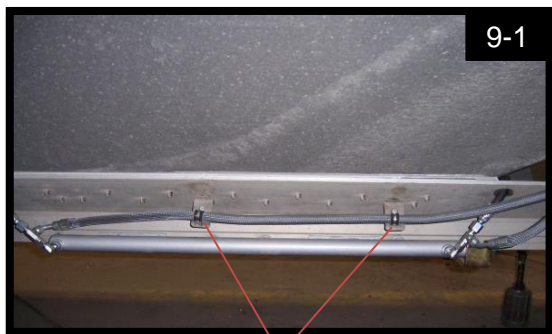
4-1/2"



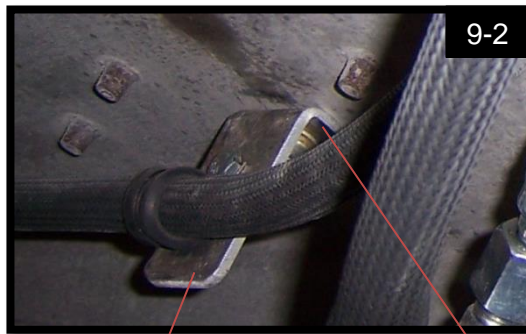
2-1/2"

Two edges parallel.

- On the side of the tub rail, install two 041-51077 brackets.
- Total of 4 brackets to be installed.
- Remove old Huckbolts and install hose brackets with new hardware.



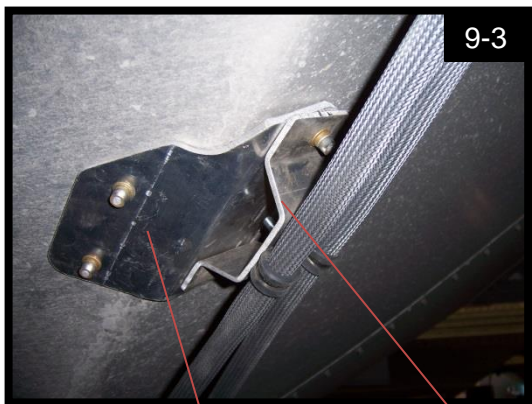
029-51077 – hydraulic hose bracket, 2 per trap frame rail on curb side only.



Long leg of bracket to clamp hose to

Short leg of bracket against tub rail

- Install bracket with shorter leg against the trap frame rail.
- Install brackets 041-51263 and 041-51074 to the tub corner of the front tub.
- Install brackets 041-51264 and 041-51074 to the tub corner of the rear tub.
- Install the brackets so that the lower edge of the bracket is 16" from the tub rail.



041-51264



041-51263

041-51074



16"

INSTALL HYDRAULIC HOSES

- Attach hydraulic hoses to the cylinders as shown below.
 - a. 029-51086 – 80” hydraulic hose. Front hopper – cylinder rod end.
 - b. 029-51241 – 152” hydraulic hose. Front hopper – cylinder tube end.
 - i. Attach hose to brackets as shown. ¼” bolts, nylock nuts, and 5/8” Jiffy clips.
 - c. 029-51241 – 152” hydraulic hose. Rear hopper – cylinder tube end.
 - i. Attach hose to brackets as shown. ¼” bolts, nylock nuts, and 5/8” Jiffy clips.
 - d. 029-51086 – 80” hydraulic hose. Rear hopper – cylinder rod end.



Front hopper

029-51086 – 80” hydraulic hose STD trailer. End with 45 degree fitting attaches to cylinder rod end.

Front hopper

029-51241 – 152” hydraulic hose STD trailer. End with 90 degree fitting attaches to cylinder tube end.



Rear hopper

029-51241 – 152” hydraulic hose STD trailer. End with 90 degree fitting attaches to cylinder rod end.

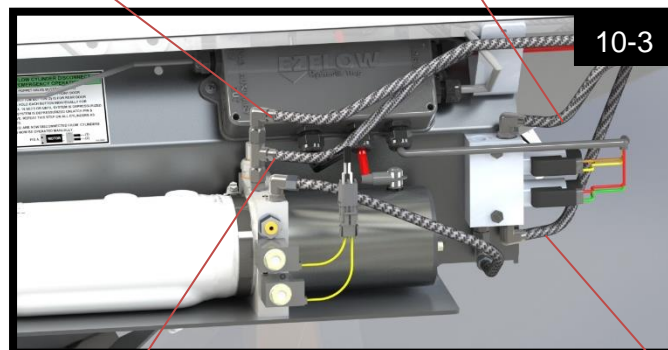
Rear hopper

029-51086 – 80” hydraulic hose STD trailer. End with 45 degree fitting attaches to cylinder tube end.

- Attach hoses to hydraulic pump and blocking valve.
 - a. 43’ + trailers - Attach hose 029-51241 – 152” hose to pump port “C2”.
 - b. 43’ + trailers - Attach hose 029-51241 – 152” hose to pump port “C2”.
 - c. 43’ + trailers - Attach hose 029-51086 – 80” hose to blocking valve port “3”.
 - d. 43’ + trailers - Attach hose 029-51086 – 80” hose to blocking valve port “2”.

Front hopper 029-51241 – 152” hydraulic hose - Opposite end with 90 degree fitting attaches to cylinder tube end.

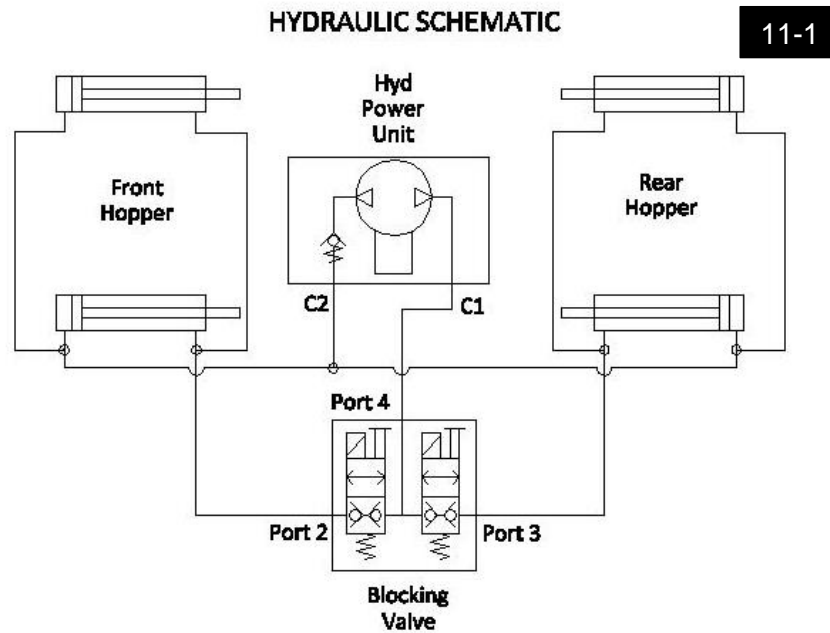
Rear hopper 029-51086 – 80” hydraulic hose - Opposite end with 45 degree fitting attaches to cylinder rod end.



Rear hopper 029-51241 – 152” hydraulic hose - Opposite end with 90 degree fitting attaches to cylinder tube end.

Front hopper 029-51086 – 80” hydraulic hose - Opposite end with 45 degree fitting attaches to cylinder rod end.

- Verify all hose hydraulic hose connections with the following schematic.



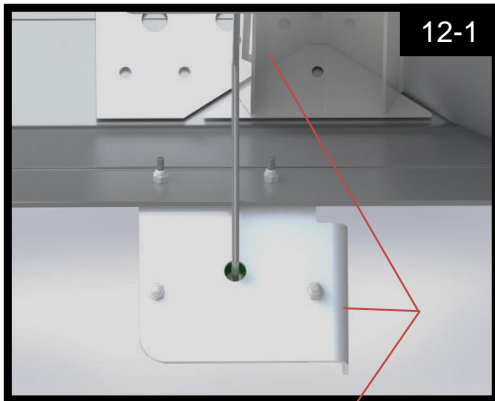
- Mount all hoses as shown in pictures below using the following hardware.
 - 032-01284 – 1/4" x 1-1/2" stainless steel bolt.
 - 032-44653 – 1/4" stainless steel nylock nut.
 - 031-51080 – 5/8" Jiffy clip.
 - 021-00843 – zip tie 7-1/2" long.



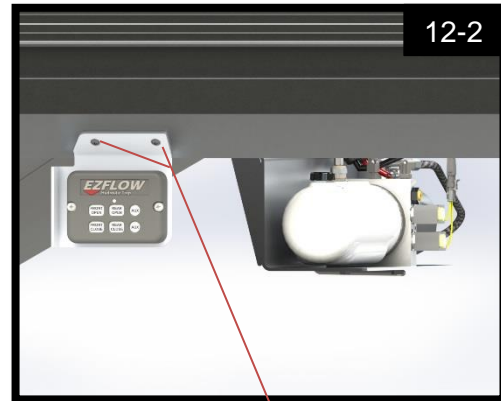
- After all hoses are mounted and secured, tighten all fittings.

INSTALL KEYPAD CONTROLLER & WIRING

- Mount the Keypad w/ bracket.
 - a. Place leading edge of the bracket to roadside frame rail in line with the apex cross member as shown.
 - b. Drill mounting holes and use (2) $\frac{1}{4}$ " x 1-1/2" stainless steel bolts and $\frac{1}{4}$ " stainless steel nylock nuts to secure bracket to the lower frame rail.

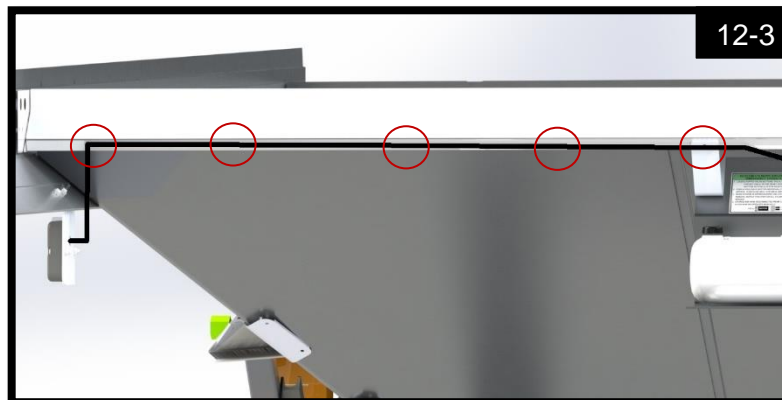


Line up the keypad mounting bracket with apex cross member.



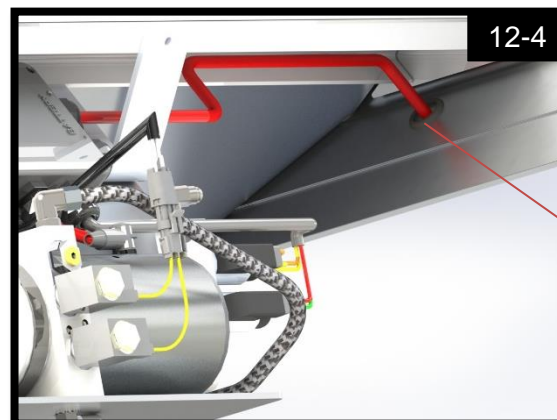
Drill $\frac{9}{32}$ " holes and install fasteners.

- Attach control wire to the apex cross member.
 - a. Use zip ties w/push in barb if available.
 - b. Drill $\frac{1}{4}$ " hole for each zip tie location. Space evenly so that the control wire is held securely in place.



INSTALL POWER WIRE

- Drill a 1" diameter hole in the side rail nearest the control box. Be careful not to damage any existing wiring or air lines that may be in the side rail.



Drill 1" Hole through Side Rail

- Install a grommet 034-53342 in the hole for protection.
- Use a fish tape to pull 031-58992 – Red 4GA 32' power wire thru the curbside(right hand) side rail in the nose of the trailer and out of the hole in the tub rail that is closest to the motor assembly.
- Route the 4GA Red power wire behind the plastic wire covers in the nose of the trailer.

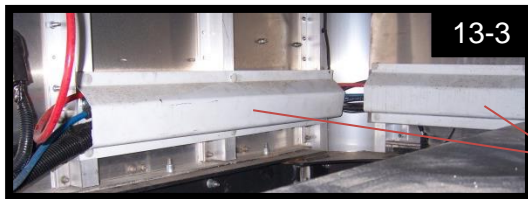


034-53342
Grommet

031-58992 RED
4GA 32'



Use fish tape down side rail to pull 031-58992 RED 4GA 32' power wire into trailer nose.



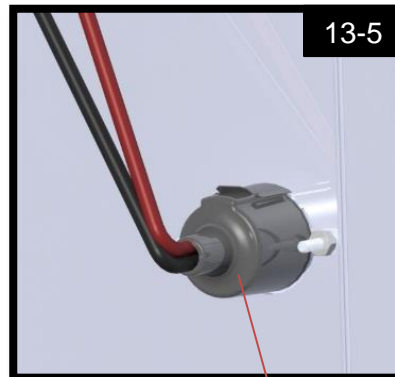
Route the power wire in nose of trailer under plastic wire raceways.

INSTALL 2-POLE PLUG RECEPTACLE

- Determine best location for the 2-pole plug receptacle in relation to the other attachments that are on the nose plate. (See last page for actual size hole pattern)
 - a. Drill a 2-1/4" hole in the nose plate where there is access to it. Exact location to be determined as "best fit".
 - b. Insert receptacle into hole and drill the bolt holes.
 - c. Attach receptacle to trailer with:
 - i. 032-43152 – 1/4" stainless steel screws.
 - ii. 032-44653 – 1/4" stainless steel nylock nuts.
- Wire 2-pole plug receptacle with power and ground wire.
 - a. Push both + POS & -NEG wires through 034-51020 receptacle rubber boot.
 - b. Apply dielectric grease liberally onto exposed wire ends of the + POS & - NEG wires.
 - c. Insert the + POS wire end into the top terminal on the backside of the plug and tighten set screw.
 - d. Insert the – NEG wire end into the bottom terminal on the backside of the plug and tighten set screw.
 - e. Slide protective rubber boot over the backside of the 2-pole receptacle to protect the wires.



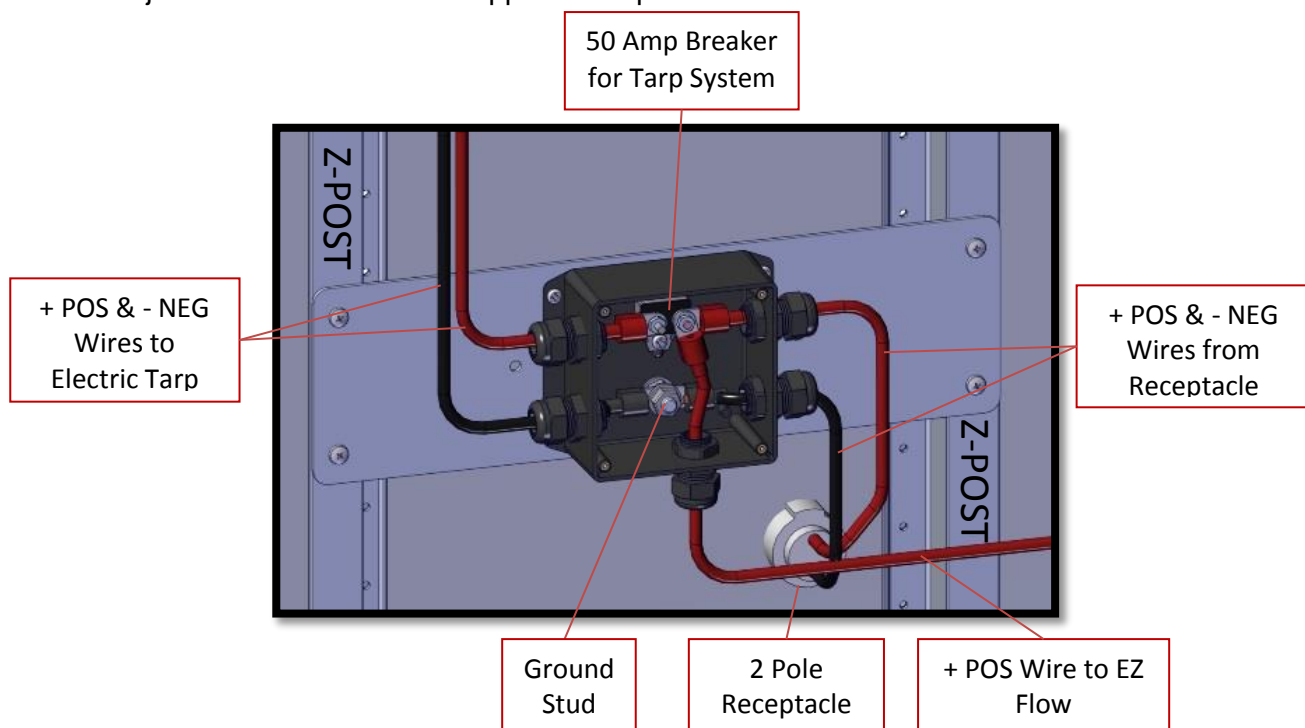
031-51223 – 2 pole vertical receptacle placement



034-51020 – Receptacle rubber boot

JUNCTION BOX INSTALLATION

- Choose a mounting location close to the back side of the 2-pole power receptacle above the 5th wheel plate in the nose of the trailer.
- Clean the Z-posts with a wire brush where the mounting plate will be installed. Surfaces must be clean to make good contact for ground.
- Use four #4-24 X 3/4" self-tapping screws to attach the mounting plate to the Z-posts.
- If electric tarp option is present or being installed, insert the POS + & NEG – wires from the electric tarp system through the compression connectors on the left side of the junction box as shown below.
- Install & crimp the supplied 3/8" lug eyelets onto the tarp system power wires. Positive must connect to the left side of the 50 amp breaker. Negative wire will attach to the ground lug on the bottom.
- Insert the RED 4GA power wire for the EZ Flow system through the bottom compression connector into the junction box. Install wire lug onto the right side of the 50 amp breaker.
- Insert the + POS & - NEG wires from the 2-pole plug receptacle into the compression connectors on the right side of the junction box as shown below.
- Install & crimp the supplied 3/8" lug eyelets onto the plug receptacle wires. Red + POS must connect to the right side of the 50 amp breaker. Connect the black – NEG wire to the ground lug on the bottom.
- Make sure all terminal nuts are installed and tight. Apply dielectric grease to each connection for protection.
- Tighten all compression connectors with a 1" end wrench to prevent moisture and debris intrusion.
- If electric tarp option is not being utilized then those compression connectors must be plugged to prevent moisture and debris from entering the junction box. A 1/4" bolt may be used for this purpose.
- Close the junction box lid with the supplied Phillips screws.



FINISH INSTALL

- Apply power to the unit by plugging into a 12 volt power supply. System requires 4GA battery power wire with 150 Amp breaker installed at battery location.
- See attached operation and remote programming instructions.
- Bleed all hydraulic lines.
 - Slightly loosen hydraulic fittings at the cylinders one at a time.
 - Run pump until oil is seen at the fittings.
 - Re-tighten the fitting.
 - Repeat for all fittings at all the cylinders.
 - Run doors open and closed a few times to make sure all air is out of lines.
 - Refill the hydraulic reservoir to the full line.

Hole pattern for 031-51223 - 2 pole, vertical, receptacle placement.

Actual Size

